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**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Application Number: 09/945,193
Filing Date: August 31, 2001
Appellant(s): SUERMONDT ET AL.

Mr. Dan Hu
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed May 19, 2008 appealing from the Office action mailed December 17, 2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

**NEW GROUND(S) OF REJECTION**

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 29-30, 34, 36-42 and 55-60 are rejected under 35 U.S.C. 101 based on Supreme Court precedent, and recent Federal Circuit decisions, a § 101 process must (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. Diamond v. Diehr, 450 U.S. 175, 184 (1981); Parker v. Flook, 437 U.S. 584, 588 n.9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70 (1972); Cochrane v. Deener, 94 U.S. 780,787-88 (1876). The process steps in claims (29-30, 34, 36-42 and 55-60) are not tied to another statutory class nor do they execute a transformation. Thus, they are non-statutory. The recitation in the preamble of the claims that the method is executed by a computer merely represents a nominal recitation and has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural

limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

While Appellants' claim encompasses a "particular machine" embodiment for method, the claim is not limited to such an embodiment. Appellants' claimed method steps, as recited in the body of independent claims 32, 38, 42 and 58 are not limited to process steps using particular structure or apparatus. To the contrary, looking only to the method steps recited in the body of claims 32, 38, 42 and 58, they would reasonably be interpreted to encompass a human being performing these steps. The Appellants' claims 32, 38, 42 and 58 preamble includes only a nominal recitation of a "computer." Nominal recitations of structure in an otherwise ineligible method fail to make the method a statutory process. See Benson, 409 U.S. at 71-72. As Comiskey recognized, "the mere use of the machine to collect data necessary for application of the mental process may not make the claim patentable subject matter." Comiskey, 499 F.3d at 1380 (citing In re Grams, 888 F.2d 835, 839-40 (Fed. Cir. 1989)). Incidental physical limitations, such as data gathering, field of use limitations, and post-solution activity are not enough to convert an abstract idea into a statutory process. In other words, nominal or token recitations of structure in a method claim do not convert an otherwise ineligible claim into an eligible one. To permit such a practice would exalt form over substance and permit claim drafters to file the sort of process claims not contemplated by the case law. Cj, Flook, 437 U.S. at 593 (rejecting the respondent's assumption that "if a process application implements a principle in some specific fashion, it automatically falls within the patentable subject matter of 5 101," because allowing such a result "would make the

determination of patentable subject matter depend simply on the draftsman's art and would ill serve the principles underlying the prohibition against patents for 'ideas' or phenomena of nature."). In this case, the only recitation of structure is in the nominal recitation in the preamble citing a "method executed by a computer." This recitation is so generic as to encompass any computing system, such that anyone who performed this method in practice would fall within the scope of these claims. Thus, the recitation of a computer in the preamble is not, in fact, a limitation at all to the scope of the claim, and the claim is directed, in essence, to the method performed by any means. As such, we fail to find that this recitation alone requires the claimed method to include a particular machine such that the method qualifies as a "process" under 5 101. Such a nominal recitation in the preamble to convert an otherwise ineligible claim into an eligible one.

The ground(s) for rejection are reproduced below from the Final Office Action, mailed December 27, 2007, and are provided here for the convenience of both the Appellant and the Board of Patent Appeals:

It is noted that the applicant did not challenge the officially noticed facts cited in the previous office action(s) therefore those statements as presented are herein after prior art. Specifically it has been established that it was old and well known in the art at the time of the invention:

- to automate a manual method/process;

- to track parts through all stages (statuses, availability, etc.) of the parts (materials, components, items, kits, etc.) life cycle wherein the tracking provides a plurality of information that enables businesses to do such things as improve the system's ability to estimate (determine, predict, forecast, etc.) stocking/inventory levels;

- to utilize averages to represent/generalize numbers and/or using averages when individual/specific data is unavailable;

- to utilize performance evaluations to identify and implement training for employees (staff, personnel, etc.) wherein the evaluations assist in the selection and/or development of training to address identified areas requiring improvement;

- to identify/flag information that the business/system deems important (relevant, necessary, required, etc.) for users to consider (review, view, etc.); and

- to carry/transport service parts (tools, kits, items, components, supplies, materials, etc.) utilizing a repair vehicle (can, van, truck, etc.) wherein the vehicle(s) provides a convenient method for transporting the technician to/from the repair site.

## *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 29,30, 36-40, 48-52 and 54-60 is rejected under 35 U.S.C. 102(b) as being anticipated by Patton & Feldman, Service Parts Handbook (1997).

Regarding Independent Claim 38 Patton & Feldmann teach a method and system comprising (Paragraphs 2-4, Page xix; Past Paragraph, Page 56, 59-62, 70-71, 403; Figures 2-3, 4-1, 4-2, 4-3, 9-2, 9-3, 16-1, 16-2, 16-3, 26-1; Tables 2-2):

- determining costs (holding, carrying, order, transportation, customer service/satisfaction, legal, contractual, insurance, obsolescence, etc.; Pages 146-152; Figures 9-2, 9-3; cost have/not have: Page 42; Paragraph 2, Page 70; Paragraph 3, Page 71; Paragraph 1, Page 72; Paragraph 1, Page 58; Paragraph 2, Page 62; Cost/Benefit: Paragraph 1, Page 74; Pages 410-411; Paragraph 2, Page 70) of mis-predicting parts that may be replaced during an onsite repair of a product in response to a repair history (Last Paragraph, Page 358; Page 371; Paragraph 2, Page 459), wherein the costs are computer based on probabilities of over/under predicting the parts (Probabilities: Paragraph 1, Page 35; Last Paragraph, Page 47; Last Paragraph, Page 73; Paragraph 1, Page 75; Last Paragraph, Page 95; Last Paragraph, Page 166, Pages 35, 167, 185; Paragraph 1, Page 168; Last Two Paragraphs, Page 187; Last Paragraph, Page 243; Figure 4-1, 4-2; Forecast based on history: Last Two Paragraphs Page 45; Paragraph 2, Page 75; Last Paragraph, Page 159; Last Paragraph, Page 188; Last Paragraph, Page 194; Page 377; Last Paragraph, Page 403; First Pass Fill Rate (FPFR) / Demand Accommodation, Demand Satisfaction, Fill rate, Paragraph 4, Page 27; Pages 402, 456);

- over-predicting, excess , extra, sent and not used, issued and not used, returns, etc.: Paragraph 2, Page 38; Paragraph 2, Page 47; Paragraph 2, Page 259; Last Paragraph, Page 443; Pages 42, 74-76; 458-459

- under-predicting, shortage, stockout (Paragraph 23, Page 27; Table 13-1), needed and not sent, not on hand, demanded not issued, part not filled, part not stocked/carried, nonstocked, request versus quantity, etc.: Paragraph 1, Page 38; Paragraph 1, Page 43; On hand vs. Demand, Page 42; Last Two Paragraphs, Page 48; Figure 2-3;

- correctly-predicting, part filled, on hand, sent and used, issued and used, etc.: Issued/demand, used/sent: Last Paragraph, Page 45; Paragraph 1, Page 46; Page 60; Last Paragraph, Page 71; Figure 4-1; Parts used/usage: Paragraph 2, Page 74; Last Paragraph, Page 78; Paragraph 1, Page 77; Paragraph 1, Page 160; Pages 248, 258-260; Paragraph 1, Page 244; Paragraph 3, Page 364; Paragraph 2, Page 403; parts used/ordered: Figures 9-2, 9-3; 16-3, 28-2;

- selecting a subset of the parts to be sent to the onsite repair in response to the costs (Authorized Stock List, ASL, Pages 58-61; Last Paragraph, Page 159; Pages 252, 254; Last Paragraph, Page 399; Pages 58, 60, 367, 399, 443, 447; Figures 4-1; 16-2, 16-3, 26-1; Table 2-3); and

- selecting a subset of parts for training call qualifiers (call qualifiers: Pages 53-54, 254, 387; Last Paragraph, Page 241; Figures 16-1, 16-2; training: Paragraph 4, Page 184; Page 395; Figure 25-2; training based on part usage; Page 248).

"*Management must keep current on what parts are where*…the New Item Candidate report, *documents what parts are used, but have not been stocked*. If parts are requested, they should be on hand. If an emergency order was required why weren't those parts in stock? There we have the information that says "We should be carrying those parts." On the flip side of that situation are *the parts the company has in stock but did not use* in the last six months. *If they weren't used why are the field technicians carrying them around in car trucks*? **Turnover and use reports** provide information that *enables management to go back and take a good look at both supply and demand*. **The holding of parts and the actual use of those parts has to be tied together.** Identification of *excess parts* means that those valuable assets can specified for consolidation and reduction." , emphasis added, Last Two Paragraphs, Page 38

"If you have that part, I am moderately pleased. After all your job is to have the part I need. If you do not have the part (zero on hand) then am I very unhappy and provability give you considerable pain…When the q*uantity of excess gets large and expensive, then the financial burden begins* to get painful. It is judged that the pain of too many parts will never get as sever as not having the part I need.", Paragraph 1, Page 42

"Logistics business models based on good *historical information* and accurate projection of the future can **accurately forecast the parts and the quantities a technician should carry**. Stocking recommendations for l*ocal inventories and car stocks can be greatly aided by the use of worldwide demand data*. The distinction between demands and issues and usage is important. Demands are what the technician requests (thinks he needs) to fix the equipment. *Not all demand parts are available to issue. Even if the parts are issued to the technician he may not need all of them*, so some are returned to good stocks. Plan based on demands. The more demand data you have, the more accurate your forecast can be. Assure that your computer system logs all part demands, even though they may not be filled. ***Differences between what***

***parts are provided, and what parts are really needed can guide improvements in diagnostics, training and discipline toward fewer parts and lower costs.***", emphasis added, Last Two Paragraphs, Page 45; Paragraph 1, Page 46

"Make sure that the *expected benefit of carrying a part is greater than the expected cost* of carry that same part…The decision equation is [Cost of Carrying versus Benefit of Carrying]. On the cost side of this equation we have the investment to be made in the part and related support systems which is primarily the cash flow and carrying cost…On the value side of this equation is the ***probability of needing the part*** *and the value that will be received* (or the cost that will be avoided) *by having it on hand*.", Paragraphs 2-3, Page 70

"one interpretation is that up to nine out of every ten parts that were expensively expedited to the field, were not really needed…In most cases it is felt that the *extra parts were ordered because of poor diagnostics failed to proactively determine the one or few parts that were probably needed to fix the failure*.", emphasis added, Last Paragraph, Page 443.

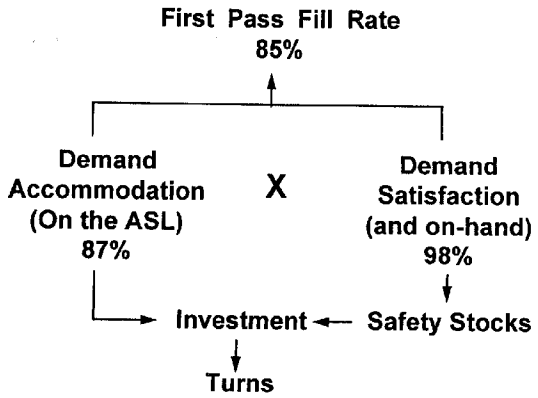



FIGURE 4-1
Components of First Pass Fill Rate follow a logical path

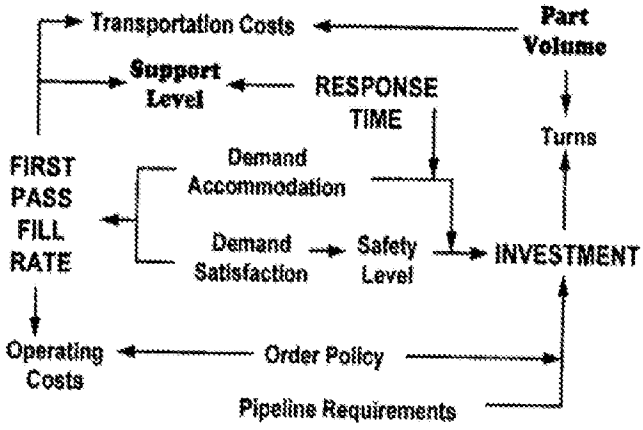



FIGURE 4-2
Logistics metrics have complex relationships

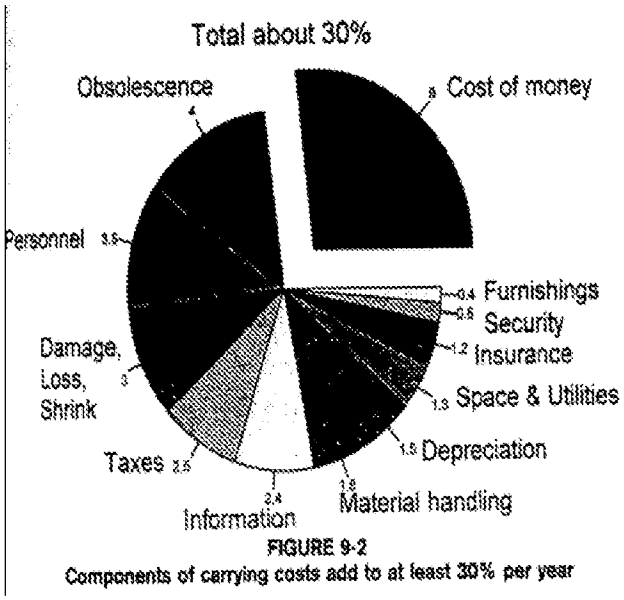
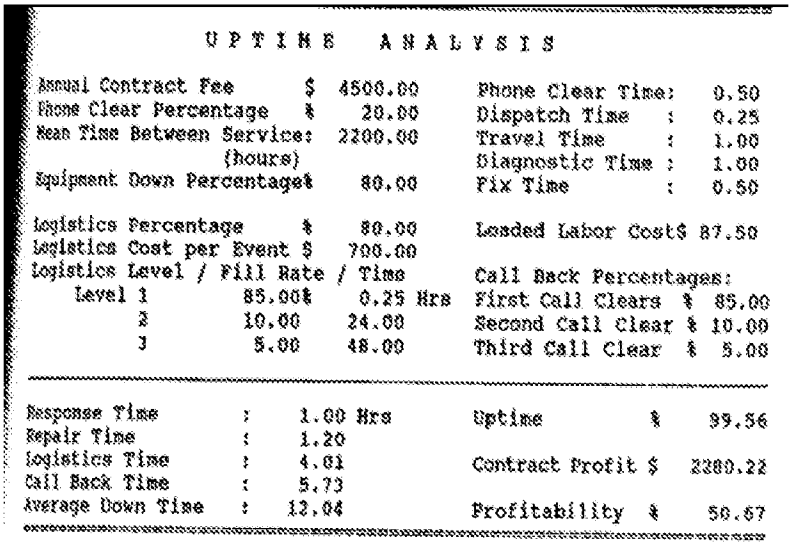



FIGURE 9-2
Components of carrying costs add to at least 30% per year



U P T I M E  A N A L Y S I S

| | | | | | |
|---|---|---|---|---|---|
| Annual Contract Fee | | $ 4500.00 | Phone Clear Time: | | 0.50 |
| Phone Clear Percentage | % | 20.00 | Dispatch Time | : | 0.25 |
| Mean Time Between Service: (hours) | | 2200.00 | Travel Time | : | 1.00 |
| | | | Diagnostic Time | : | 1.00 |
| Equipment Down Percentage% | | 80.00 | Fix Time | : | 0.50 |
| Logistics Percentage | % | 80.00 | Loaded Labor Cost$ | | 87.50 |
| Logistics Cost per Event | $ | 700.00 | | | |
| Logistics Level / Fill Rate / Time | | | Call Back Percentages: | | |
| Level 1 | 85.00% | 0.25 Hrs | First Call Clears | % | 85.00 |
| 2 | 10.00 | 24.00 | Second Call Clear | % | 10.00 |
| 3 | 5.00 | 48.00 | Third Call Clear | % | 5.00 |
| Response Time | : | 1.00 Hrs | Uptime | % | 99.56 |
| Repair Time | : | 1.20 | | | |
| Logistics Time | : | 4.01 | Contract Profit | $ | 2280.22 |
| Call Back Time | : | 5.73 | | | |
| Average Down Time | : | 12.04 | Profitability | % | 50.67 |

FIGURE 16-1
Logistics has major influence on uptime

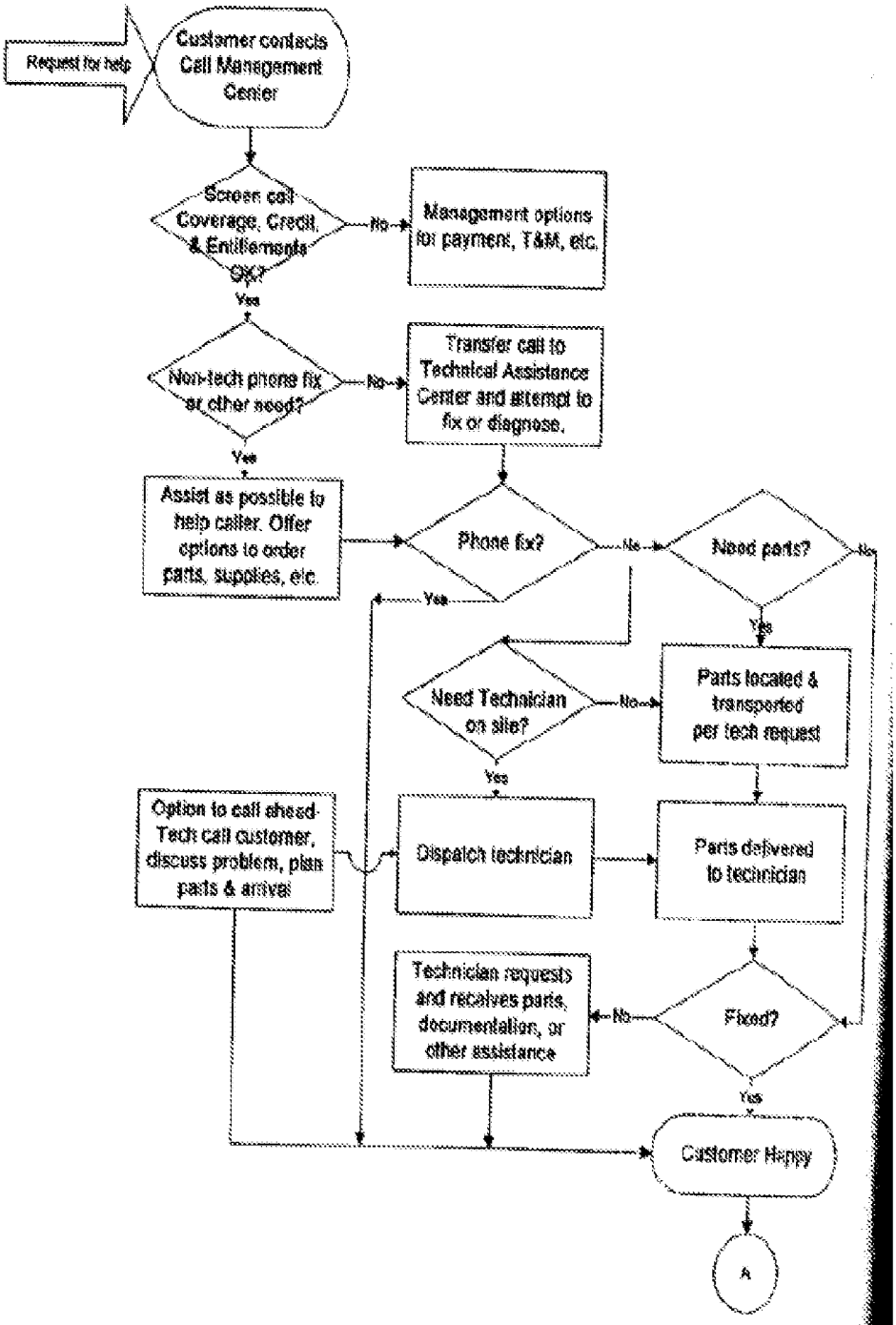



FIGURE 16-2
Parts are integral to customer satisfaction

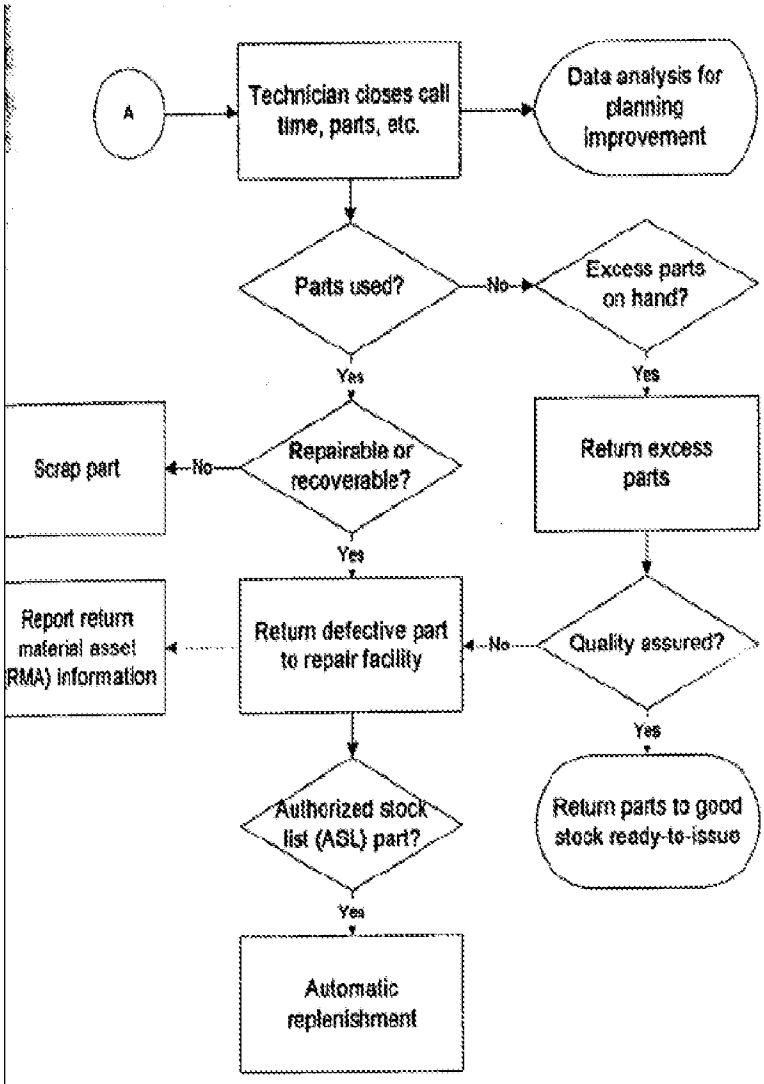



**FIGURE 16-3**
**The call is not complete until returns and reporting are done**

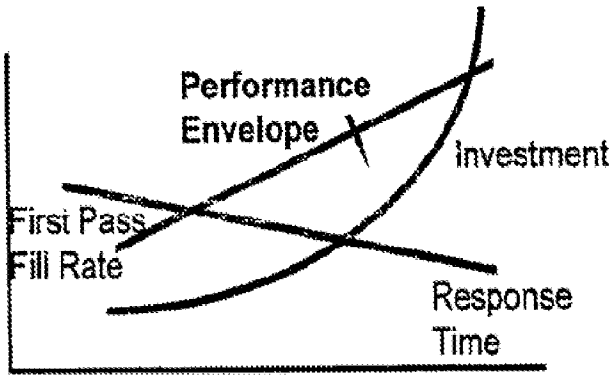



FIGURE 26-1
The logistics performance envelope is bounded by the range of acceptable metrics

## *Comprehensive system goals*

Three major goals stand above the rest as measures of total system performance. They are:

$$\text{Operational Availability (Uptime) } A_o = \frac{\text{MTBM}}{\text{MTBM} + \text{MDT}} \geq 98\%$$

$$\text{First Call Fix Rate} = \frac{\text{Quality Satisfied at First Attempt}}{\text{Total Requests}} \geq 90\%$$

Restore Time = Time from Notification of Failure until Operable ≥ 99% per Contract

**Figure 1: Page 58, emphasis added**

$$\text{Demand Accommodation (DA)} = \frac{\text{SKUs on Authorized Stock List}}{\text{SKUs Demanded}} \geq 90\%$$

**Figure 2: Page 59**

$$\text{Demand Satisfaction (DS)} = \frac{\text{Total Quantity of ASL Parts Issued}}{\text{Total Quantity of ASL Parts Demanded}} \geq 95\%$$

**Figure 3: Page 60**

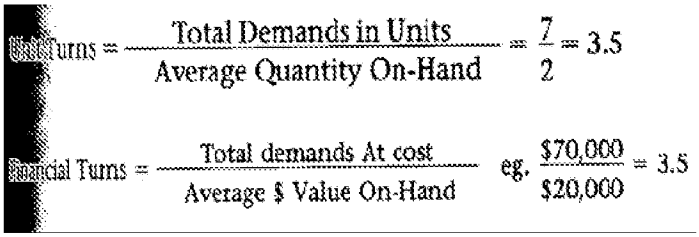



**Figure 4: Page 61**

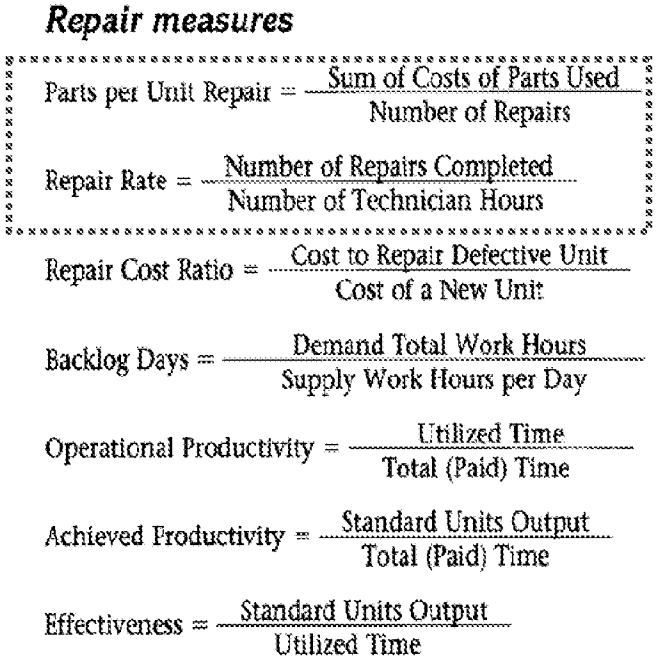



**Figure 5: Page 66, emphasis added**

USE VERSUS DEMAND Should consumption at the end of the supply chain be used as a basis for stocking or should we use the demand data or even the issues data? To quickly understand the difference, consider that technicians typically order more parts than they ultimately use. Not all parts demanded (ordered) are available to issue. Not all issued parts are consumed (used). Since the function of logistics is to support the field technicians, who in turn support the ultimate customer, it is recommended that logistics stock be based on *demand*.

REQUESTS VERSUS QUANTITY A request is an order, which may contain many part numbers and multiple quantities of each. The initial inclination of most people is to use demand quantity, but consider the "Principle of Dissatisfaction" which states that if someone asks once for ten of a nonstocked item they leave disappointed once. If a technician asks ten times for one of a nonstocked item, then he leaves disappointed ten times. For this reason it is recommended that the demand pattern be analyzed. If the average quantity demanded per request is greater than 1.5, then use the request rate as a basis to decide what parts to stock.

FORECAST VERSUS HISTORICAL Historical data is much easier to use in an "untreated" form and can be used as a forecast for low demand items because of the problems of forecasting for small numbers . For other items we should go to the trouble of formal statistical forecasting. This will assure that stocking decisions are forward looking rather than backward looking. New product plans should be folded in, as well as factors that planners know are not reflected in the historical data. Once the data has been manipulated we can apply Pareto analysis, Figure 26-2.

**Figure 6: Page 403, emphasis added**

Regarding Independent Claim 44 Patton & Feldmann teach a method and system that determines costs (holding, carrying, order, transportation, customer service/satisfaction, legal, contractual, insurance, obsolescence, etc.; Pages 146-152; Figures 9-2, 9-3; cost have/not have: Page 42; Paragraph 2, Page 70; Paragraph 3, Page 71; Paragraph 1, Page 72; Paragraph 1, Page 58; Paragraph 2, Page 62; Cost/Benefit: Paragraph 1, Page 74; Pages 410-411; Paragraph 2, Page 70) of mis-predicting parts that may be replaced during an onsite repair of a product in response to a repair history (Last Paragraph, Page 358; Page 371; Paragraph 2, Page 459), and that selects a subset of the parts to be sent to the onsite repair in response to the costs (Authorized Stock List, ASL, Pages 58-61; Last Paragraph, Page 159; Pages 252, 254; Last Paragraph, Page 399; Pages 58, 60, 367, 399, 443, 447; Figures 4-1; 16-2, 16-3, 26-1; Table 2-3), wherein the costs are computer based on probabilities of over/under predicting the parts (Probabilities: Paragraph 1, Page 35; Last Paragraph, Page 47; Last Paragraph, Page 73; Paragraph 1, Page 75; Last Paragraph, Page 95; Last Paragraph, Page 166, Pages 35, 167, 185; Paragraph 1, Page 168; Last Two Paragraphs, Page 187; Last Paragraph, Page 243; Figure 4-1, 4-2; Forecast based on history: Last Two Paragraphs Page 45; Paragraph 2, Page 75; Last Paragraph, Page 159; Last Paragraph, Page 188; Last Paragraph, Page 194; Page 377; Last Paragraph, Page 403; First Pass Fill Rate (FPFR) / Demand Accommodation, Demand Satisfaction, Fill rate, Paragraph 4, Page 27; Pages 402, 456);

- over-predicting, excess , extra, sent and not used, issued and not used, returns, etc.: Paragraph 2, Page 38; Paragraph 2, Page 47; Paragraph 2, Page 259; Last Paragraph, Page 443; Pages 42, 74-76; 458-459

- under-predicting, shortage, stockout (Paragraph 23, Page 27; Table 13-1), needed and not sent, not on hand, demanded not issued, part not filled, part not stocked/carried, nonstocked, request versus quantity, etc.: Paragraph 1, Page 38; Paragraph 1, Page 43; On hand vs. Demand, Page 42; Last Two Paragraphs, Page 48; Figure 2-3;

- correctly-predicting, part filled, on hand, sent and used, issued and used, etc.: Issued/demand, used/sent: Last Paragraph, Page 45; Paragraph 1, Page 46; Page 60; Last Paragraph, Page 71; Figure 4-1; Parts used/usage: Paragraph 2, Page 74; Last Paragraph, Page 78; Paragraph 1, Page 77; Paragraph 1, Page 160; Pages 248, 258-260; Paragraph 1, Page 244; Paragraph 3, Page 364; Paragraph 2, Page 403; parts used/ordered: Figures 9-2, 9-3; 16-3, 28-2;

- wherein the computation of the costs is based on the probabilities of under/over predicting according to the number of times that the parts were under-predicted, over-predicted and correctly predicted (First Pass Fill Rate (FPFR), Demand Accommodation, Demand Satisfaction, fill rate, Order Vs. Use Ration, issues vs. demand, issued vs. used, parts usage history, etc.) wherein the probabilities are based on the number of times the parts were over/under/correctly predicted (Order vs. Use ratio Bullet 1, Page 166; Fill rate, Paragraph 4, Page 27; Pages 402, 456; FCFR: Pages 58, 90, 252; FPFR: 10, 367, 399, 466), the repair history containing the number

of times parts were under, over and correctly predicted (Bullet 1, Page 166; Fill rate, Paragraph 4, Page 27; Pages 402, 456; FCFR: Pages 58, 90, 252; FPFR: 10, 367, 399, 466).

Regarding Claim 46 Patton & Feldmann teach a method and system wherein the repair history includes identification of a set of parts sent to a set of prior onsite repairs and a list of the actual parts needed in the prior onsite repairs (issued/demand, used/sent: Last Paragraph, Page 45; Paragraph 1, Page 46; Last Paragraph, Page 71; Figure 4-1; Page 60; parts used/usage: Paragraph 2, Page 74; Last Paragraph, Page 78; Paragraph 1, Page 77; Paragraph 1, Page 160; Pages 248, 258-260; Paragraph 1, Page 244; Paragraph 3, Page 364; Paragraph 2, Page 403 – parts used/ordered; Figures 9-2, 9-3; 16-3, 28-2; "Information flow of *field failure details* to the repair technician provides major assist to diagnostic operations…The Repair Center Should be online with service call records…The receiving technician can then **look at the service call report** on his monitor **and obtain guidance to failure cause and probable repair action**.", emphasis added, Paragraph 1, Page 64; parts needed Last Paragraph, Page 241; Page 390; Bullet 1, Page 164).

Regarding Claim 48 Patton & Feldmann teach a method and system wherein the costs further comprise waste metrics (cost, excess inventory, wasted trips, broken calls, etc.) for a plurality of set of parts and the subset of parts selected comprises less than all of the set of parts for the onsite repair in response to the waste metrics (extra trips/cost/waste: Paragraph 1, Page 37; Last Paragraph, Page 40; Last Two

Paragraphs, Page 48; wasted trips; Last Paragraph, Page 40; Paragraph 1, Page 258; Paragraph 1, Page 260; Table 2-2).

Regarding Claim 49 Patton & Feldmann teach a method and system wherein selecting the subset of parts includes selecting a subset of the parts for transport to the onsite repair (Authorized Stock Lists (ASL) – Pages 58-61; Last Paragraph, Page 159; Pages 252, 254; Last Paragraph, Page 399; Pages 58, 60, 367, 399, 443, 447; Figures 4-1; 16-2, 16-3, 26-1; Table 2-3; Pages 159-160, 443; Vehicle stock: Last Paragraph, Page 43; Paragraph 1, Page 44; Page 239; Last Paragraph, Page 241; Page 245; Page 451; Figure 15-2).

Regarding Claim 50 Patton & Feldmann teach a method and system wherein selecting the subset of parts includes selecting a subset of parts for training call qualifiers (call qualifiers: Pages 53-54, 254, 387; Last Paragraph, Page 241; Figures 16-1, 16-2; training: Paragraph 4, Page 184; Page 395; Figure 25-2; training based on part usage; Page 248).

Regarding Claim 51 Patton & Feldmann teach a method and system wherein selecting the subset of parts includes selecting a subset of parts for flagging to call qualifiers (call qualifiers: Pages 53-54, 254, 387; Last Paragraph, Page 241; Figures 16-1, 16-2; flag parts: Paragraph 2, Page 47; Paragraph 2, Page 259).

Regarding Claim 52 Patton & Feldmann teach a method and system wherein selecting the subset of parts includes selecting the subset of parts for stocking a repair vehicle (Last Paragraph, Page 43; Paragraph 1, Page 44; Page 239; Last Paragraph, Page 241; Page 245; Page 451; Figure 15-2).

Regarding Claim 54 Patton & Feldmann teach a method and system further comprising determining which personnel to target for additional training in response to the costs (Paragraph 4, Page 184; Page 395; Figure 25-2; training based on part usage; Page 248).

Regarding Independent Claim 42 Patton & Feldmann teach a method and system comprising (Paragraphs 2-4, Page xix; Past Paragraph, Page 56, 59-62, 70-71, 403; Figures 2-3, 4-1, 4-2, 4-3, 9-2, 9-3, 16-1, 16-2, 16-3, 26-1; Tables 2-2):

- determining costs (holding, carrying, order, transportation, customer service/satisfaction, legal, contractual, insurance, obsolescence, etc.; Pages 146-152; Figures 9-2, 9-3; cost have/not have: Page 42; Paragraph 2, Page 70; Paragraph 3, Page 71; Paragraph 1, Page 72; Paragraph 1, Page 58; Paragraph 2, Page 62; Cost/Benefit: Paragraph 1, Page 74; Pages 410-411; Paragraph 2, Page 70) of mis-predicting parts that may be replaced during an onsite repair of a product in response to a repair history (Last Paragraph, Page 358; Page 371; Paragraph 2, Page 459), wherein the costs are computer based on probabilities of over/under predicting the parts (Probabilities: Paragraph 1, Page 35; Last Paragraph, Page 47; Last Paragraph, Page

73; Paragraph 1, Page 75; Last Paragraph, Page 95; Last Paragraph, Page 166, Pages 35, 167, 185; Paragraph 1, Page 168; Last Two Paragraphs, Page 187; Last Paragraph, Page 243; Figure 4-1, 4-2; Forecast based on history: Last Two Paragraphs Page 45; Paragraph 2, Page 75; Last Paragraph, Page 159; Last Paragraph, Page 188; Last Paragraph, Page 194; Page 377; Last Paragraph, Page 403; First Pass Fill Rate (FPFR) / Demand Accommodation, Demand Satisfaction, Fill rate, Paragraph 4, Page 27; Pages 402, 456);

- over-predicting, excess , extra, sent and not used, issued and not used, returns, etc.: Paragraph 2, Page 38; Paragraph 2, Page 47; Paragraph 2, Page 259; Last Paragraph, Page 443; Pages 42, 74-76; 458-459

- under-predicting, shortage, stockout (Paragraph 23, Page 27; Table 13-1), needed and not sent, not on hand, demanded not issued, part not filled, part not stocked/carried, nonstocked, request versus quantity, etc.: Paragraph 1, Page 38; Paragraph 1, Page 43; On hand vs. Demand, Page 42; Last Two Paragraphs, Page 48; Figure 2-3;

- correctly-predicting, part filled, on hand, sent and used, issued and used, etc.: Issued/demand, used/sent: Last Paragraph, Page 45; Paragraph 1, Page 46; Page 60; Last Paragraph, Page 71; Figure 4-1; Parts used/usage: Paragraph 2, Page 74; Last Paragraph, Page 78; Paragraph 1, Page 77; Paragraph 1, Page 160; Pages 248, 258-260; Paragraph 1, Page 244; Paragraph 3, Page 364; Paragraph 2, Page 403; parts used/ordered: Figures 9-2, 9-3; 16-3, 28-2;

- selecting a subset of the parts to be sent to the onsite repair in response to the costs (Authorized Stock List, ASL, Pages 58-61; Last Paragraph, Page 159; Pages 252, 254; Last Paragraph, Page 399; Pages 58, 60, 367, 399, 443, 447; Figures 4-1; 16-2, 16-3, 26-1; Table 2-3);

- determining which personnel to target for additional training in response to the costs (Paragraph 4, Page 184; Page 395; Figure 25-2; training based on part usage; Page 248).

Regarding Claims 29-30 Patton & Feldmann teach a system and method wherein the cost computation based on the over/under predicting parts comprises computing the costs associated with unnecessarily sending (extra, excess) and not sending (broken call) the parts to the onsite repair (cost have/not have: Page 42; Paragraph 2, Page 70; Paragraph 3, Page 71; Paragraph 1, Page 72; Paragraph 1, Page 58; Paragraph 2, Page 62; Cost/Benefit: Paragraph 1, Page 74; Pages 410-411; Paragraph 2, Page 70; Figure 2-3).

Regarding Claims 33-34 Patton & Feldmann teach a method wherein the computation of the costs is based on the probabilities of under/over predicting according to the number of times that the parts were under-predicted, over-predicted and correctly predicted (First Pass Fill Rate (FPFR), Demand Accommodation, Demand Satisfaction, fill rate, Order Vs. Use Ration, issues vs. demand, issued vs. used, parts usage history, etc) wherein the probabilities are based on the number of times the parts were

over/under/correctly predicted (Order vs. Use ratio Bullet 1, Page 166; Fill rate, Paragraph 4, Page 27; Pages 402, 456; FCFR: Pages 58, 90, 252; FPFR: 10, 367, 399, 466).

Regarding Claim 36 Patton & Feldmann teach a method and system wherein determining the costs includes determining an average cost associated with over/under/mis-predicting the parts (Page 66; Paragraph 3, Page 265; Figure 28-2).

Regarding Claim 37 Patton & Feldmann teach a method and system wherein selecting the subset of parts includes selecting a subset of the parts for transport to the onsite repair (Authorized Stock Lists (ASL) – Pages 58-61; Last Paragraph, Page 159; Pages 252, 254; Last Paragraph, Page 399; Pages 58, 60, 367, 399, 443, 447; Figures 4-1; 16-2, 16-3, 26-1; Table 2-3; Pages 159-160, 443; Vehicle stock: Last Paragraph, Page 43; Paragraph 1, Page 44; Page 239; Last Paragraph, Page 241; Page 245; Page 451; Figure 15-2).

Regarding Claim 39 Patton & Feldmann teach a method and system wherein selecting the subset of parts includes selecting a subset of parts for flagging to call qualifiers (call qualifiers: Pages 53-54, 254, 387; Last Paragraph, Page 241; Figures 16-1, 16-2; flag parts: Paragraph 2, Page 47; Paragraph 2, Page 259).

Regarding Claim 40 Patton & Feldmann teach a method and system wherein selecting the subset of parts includes selecting the subset of parts for stocking a repair vehicle (Last Paragraph, Page 43; Paragraph 1, Page 44; Page 239; Last Paragraph, Page 241; Page 245; Page 451; Figure 15-2).

Regarding Claim 55 Patton & Feldmann teach a method and system wherein determining the costs of mis-predicting parts is for a particular onsite repair of a particular product wherein the selection of the subset of parts is for the particular onsite repair of the particular product (failure rate: Paragraph 1, Page 259; parts for: Page 295; forecast parts Paragraph 2, Page 168; Page 299).

Regarding Claim 56 Patton & Feldmann teach a method and system wherein determining the costs of mis-predicting parts comprises determining the costs of mis-predicting corresponding sets of parts (Page 42; Paragraph 1, Page 58; Paragraph 2, Page 62; Paragraph 2, Page 70; Paragraphs 2-3, Page 71; Paragraph 1, Page 72; Paragraph 1, Page 74; Pages 410-411; Figure 2-3).

Regarding Claims 57 and 60 Patton & Feldmann teach a method and system wherein selecting the subset of parts comprises selecting less than all of the sets of parts (Last Paragraph, Page 43; Paragraph 1, Page 44; Page 239; Last Paragraph, Page 241; Page 245; Page 451; Figure 15-2).

Regarding Claim 59 Patton & Feldmann teach a method and system wherein computing the costs based on the probabilities of over/under/mis-predicting parts takes into account a cost of an extra trip to a repair site and a cost of stocking and storing the unneeded part (extra trips/cost/waste: Paragraph 1, Page 37; Last Paragraph, Page 40; Last Two Paragraphs, Page 48; wasted trips; Last Paragraph, Page 40; Paragraph 1, Page 258; Paragraph 1, Page 260; Table 2-2; broken calls: Paragraph 1, Page 444).

Regarding Independent Claim 58 Patton & Feldmann teach a method and system comprising (Paragraphs 2-4, Page xix; Past Paragraph, Page 56, 59-62, 70-71, 403; Figures 2-3, 4-1, 4-2, 4-3, 9-2, 9-3, 16-1, 16-2, 16-3, 26-1; Tables 2-2):

- determining costs (holding, carrying, order, transportation, customer service/satisfaction, legal, contractual, insurance, obsolescence, etc.; Pages 146-152; Figures 9-2, 9-3; cost have/not have: Page 42; Paragraph 2, Page 70; Paragraph 3, Page 71; Paragraph 1, Page 72; Paragraph 1, Page 58; Paragraph 2, Page 62; Cost/Benefit: Paragraph 1, Page 74; Pages 410-411; Paragraph 2, Page 70) of mis-predicting parts that may be replaced during an onsite repair of a product in response to a repair history (Last Paragraph, Page 358; Page 371; Paragraph 2, Page 459), wherein the costs are computer based on probabilities of over/under predicting the parts (Probabilities: Paragraph 1, Page 35; Last Paragraph, Page 47; Last Paragraph, Page 73; Paragraph 1, Page 75; Last Paragraph, Page 95; Last Paragraph, Page 166, Pages 35, 167, 185; Paragraph 1, Page 168; Last Two Paragraphs, Page 187; Last Paragraph, Page 243; Figure 4-1, 4-2; Forecast based on history: Last Two

Paragraphs Page 45; Paragraph 2, Page 75; Last Paragraph, Page 159; Last Paragraph, Page 188; Last Paragraph, Page 194; Page 377; Last Paragraph, Page 403; First Pass Fill Rate (FPFR) / Demand Accommodation, Demand Satisfaction, Fill rate, Paragraph 4, Page 27; Pages 402, 456);

1. over-predicting, excess , extra, sent and not used, issued and not used, returns, etc.: Paragraph 2, Page 38; Paragraph 2, Page 47; Paragraph 2, Page 259; Last Paragraph, Page 443; Pages 42, 74-76; 458-459

2. under-predicting, shortage, stockout (Paragraph 23, Page 27; Table 13-1), needed and not sent, not on hand, demanded not issued, part not filled, part not stocked/carried, nonstocked, request versus quantity, etc.: Paragraph 1, Page 38; Paragraph 1, Page 43; On hand vs. Demand, Page 42; Last Two Paragraphs, Page 48; Figure 2-3;

3. correctly-predicting, part filled, on hand, sent and used, issued and used, etc.: Issued/demand, used/sent: Last Paragraph, Page 45; Paragraph 1, Page 46; Page 60; Last Paragraph, Page 71; Figure 4-1; Parts used/usage: Paragraph 2, Page 74; Last Paragraph, Page 78; Paragraph 1, Page 77; Paragraph 1, Page 160; Pages 248, 258-260; Paragraph 1, Page 244; Paragraph 3, Page 364; Paragraph 2, Page 403; parts used/ordered: Figures 9-2, 9-3; 16-3, 28-2;

- selecting a subset of the parts to be sent to the onsite repair in response to the costs (Authorized Stock List, ASL, Pages 58-61; Last Paragraph, Page 159; Pages 252, 254; Last Paragraph, Page 399; Pages 58, 60, 367, 399, 443, 447; Figures 4-1; 16-2, 16-3, 26-1; Table 2-3);

- determining the costs of mis-predicting parts comprises determining expected wastes from the corresponding parts wherein the waste (cost) is based on the number of times the part was under, over and correctly predicted (First Pass Fill Rate, Demand Accommodation, Demand Satisfaction, Fix Call Rate; Paragraph 1, Page 74; Pages 59-63; 401, 410-411; Paragraph 2, Page 70; Figures 4-1, 4-2, 26-1);

- wherein the repair history containing the number of times parts were under, over and correctly predicted (Bullet 1, Page 166; Fill rate, Paragraph 4, Page 27; Pages 402, 456; FCFR: Pages 58, 90, 252; FPFR: 10, 367, 399, 466).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 32, 44-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patton & Feldman, Service Parts Handbook (1997) and further in view of Patton et al., Service Management Principles and Practice (cited on PTO-892 mailed April 14, 2006).

Regarding Independent Claims 32 and 45 Patton & Feldmann teach a system and method comprising:

- determining costs (holding, carrying, order, transportation, customer service/satisfaction, legal, contractual, insurance, obsolescence, etc.; Pages 146-152; Figures 9-2, 9-3; cost have/not have: Page 42; Paragraph 2, Page 70; Paragraph 3, Page 71; Paragraph 1, Page 72; Paragraph 1, Page 58; Paragraph 2, Page 62; Cost/Benefit: Paragraph 1, Page 74; Pages 410-411; Paragraph 2, Page 70) of mis-predicting parts that may be replaced during an onsite repair of a product in response to a repair history (Last Paragraph, Page 358; Page 371; Paragraph 2, Page 459), wherein the costs are computer based on probabilities of over/under predicting the parts (Probabilities: Paragraph 1, Page 35; Last Paragraph, Page 47; Last Paragraph, Page 73; Paragraph 1, Page 75; Last Paragraph, Page 95; Last Paragraph, Page 166, Pages

35, 167, 185; Paragraph 1, Page 168; Last Two Paragraphs, Page 187; Last Paragraph, Page 243; Figure 4-1, 4-2; Forecast based on history: Last Two Paragraphs Page 45; Paragraph 2, Page 75; Last Paragraph, Page 159; Last Paragraph, Page 188; Last Paragraph, Page 194; Page 377; Last Paragraph, Page 403; First Pass Fill Rate (FPFR) / Demand Accommodation, Demand Satisfaction, Fill rate, Paragraph 4, Page 27; Pages 402, 456; Pages 59, 405);

- selecting a subset of the parts to be sent to the onsite repair in response to the costs (Authorized Stock List, ASL, Pages 58-61; Last Paragraph, Page 159; Pages 252, 254; Last Paragraph, Page 399; Pages 58, 60, 367, 399, 443, 447; Figures 4-1; 16-2, 16-3, 26-1; Table 2-3).;

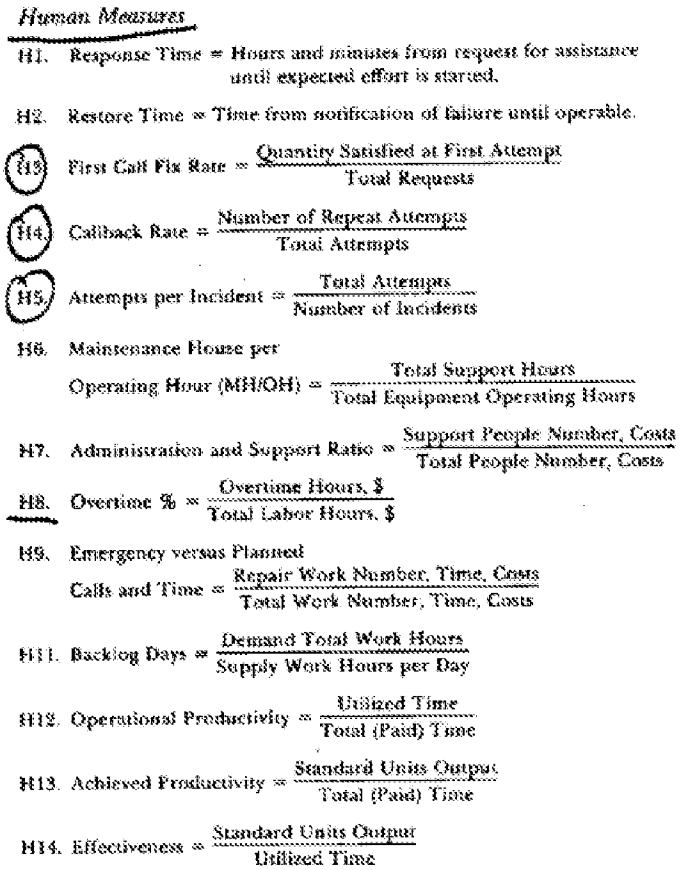
- identifying a set of symptoms associated with the product (analyze repair history: Last Paragraph, Page 358; Page 371; Paragraph 2, Page 459; symptoms – repair history, "Information flow of *field failure details* to the repair technician provides major assist to diagnostic operations…The Repair Center Should be online with service call records…The receiving technician can then **look at the service call report** on his monitor **and obtain guidance to failure cause and probable repair action**.", emphasis added, Paragraph 1, Page 64; parts needed Last Paragraph, Page 241; Page 390; Bullet 1, Page 164);

- wherein determining the costs comprises determining a set of costs of mis-predicting a subgroup of the parts according to parameters *indicating* at least a number of times (service call, calls, travel, First Pass Fill Rate, First Call Fix Rate, etc.; FCFR: Pages 58, 90, 252; FPFR: 10, 367, 399, 466; Demand Accommodation/Satisfaction: Pages 59, 405) that the set of symptoms were reported, the subgroup parts were sent

and at least one part in the subgroup of parts was needed to complete the repair and at least one part in the subgroup of parts was unnecessary in the onsite repair.

While Patton & Feldmann implicitly track and analyze the number of trips (calls, visits, trips) it takes to complete a repair (First Call Fix rate) Patton & Feldmann do not expressly teach determining the number of *trips* as claimed.

Patton et al. teach determining the number of trips (calls, visits, callbacks, etc.; Callback Rate, First Call Fix Rate, Attempts per Incident; H3-H5, Page 48; Callbacks Page 50) as well as a plurality of well known performance metrics including but not limited to callback rates, first call fix rate, attempts per incident (i.e. symptom), parts usage, parts per unit repair, demand accommodation, demand satisfaction and the like (Pages 46, 48, 50, 51; as shown below) in an analogous art of service management for the purpose of managing the performance of the service management process, specifically evaluating a service personnel's repair/service abilities (Callbacks, Page 50).



*Human Measures*

H1. Response Time = Hours and minutes from request for assistance until expected effort is started.

H2. Restore Time = Time from notification of failure until operable.

H3. First Call Fix Rate = $\frac{\text{Quantity Satisfied at First Attempt}}{\text{Total Requests}}$

H4. Callback Rate = $\frac{\text{Number of Repeat Attempts}}{\text{Total Attempts}}$

H5. Attempts per Incident = $\frac{\text{Total Attempts}}{\text{Number of Incidents}}$

H6. Maintenance House per Operating Hour (MH/OH) = $\frac{\text{Total Support Hours}}{\text{Total Equipment Operating Hours}}$

H7. Administration and Support Ratio = $\frac{\text{Support People Number, Costs}}{\text{Total People Number, Costs}}$

H8. Overtime % = $\frac{\text{Overtime Hours, \$}}{\text{Total Labor Hours, \$}}$

H9. Emergency versus Planned Calls and Time = $\frac{\text{Repair Work Number, Time, Costs}}{\text{Total Work Number, Time, Costs}}$

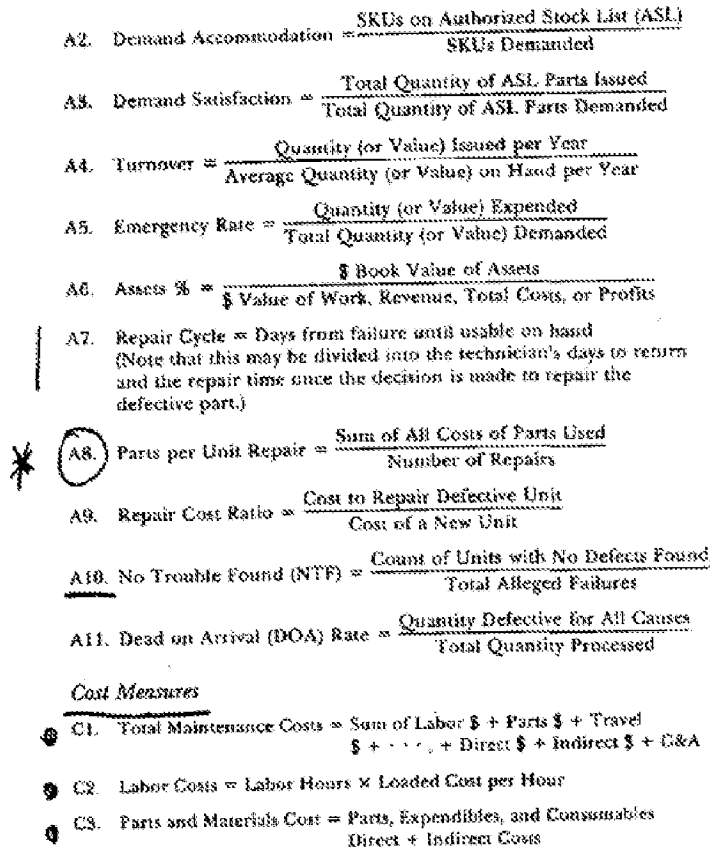
H11. Backlog Days = $\frac{\text{Demand Total Work Hours}}{\text{Supply Work Hours per Day}}$

H12. Operational Productivity = $\frac{\text{Utilized Time}}{\text{Total (Paid) Time}}$

H13. Achieved Productivity = $\frac{\text{Standard Units Output}}{\text{Total (Paid) Time}}$

H14. Effectiveness = $\frac{\text{Standard Units Output}}{\text{Utilized Time}}$

**Figure 7: Patton et al., Service Management Principles and Practice, Page 48**



A2. Demand Accommodation = $\frac{\text{SKUs on Authorized Stock List (ASL)}}{\text{SKUs Demanded}}$

A3. Demand Satisfaction = $\frac{\text{Total Quantity of ASL Parts Issued}}{\text{Total Quantity of ASL Parts Demanded}}$

A4. Turnover = $\frac{\text{Quantity (or Value) Issued per Year}}{\text{Average Quantity (or Value) on Hand per Year}}$

A5. Emergency Rate = $\frac{\text{Quantity (or Value) Expended}}{\text{Total Quantity (or Value) Demanded}}$

A6. Assets % = $\frac{\text{\$ Book Value of Assets}}{\text{\$ Value of Work, Revenue, Total Costs, or Profits}}$

A7. Repair Cycle = Days from failure until usable on hand (Note that this may be divided into the technician's days to return and the repair time since the decision is made to repair the defective part.)

A8. Parts per Unit Repair = $\frac{\text{Sum of All Costs of Parts Used}}{\text{Number of Repairs}}$

A9. Repair Cost Ratio = $\frac{\text{Cost to Repair Defective Unit}}{\text{Cost of a New Unit}}$

A10. No Trouble Found (NTF) = $\frac{\text{Count of Units with No Defects Found}}{\text{Total Alleged Failures}}$

A11. Dead on Arrival (DOA) Rate = $\frac{\text{Quantity Defective for All Causes}}{\text{Total Quantity Processed}}$

*Cost Measures*

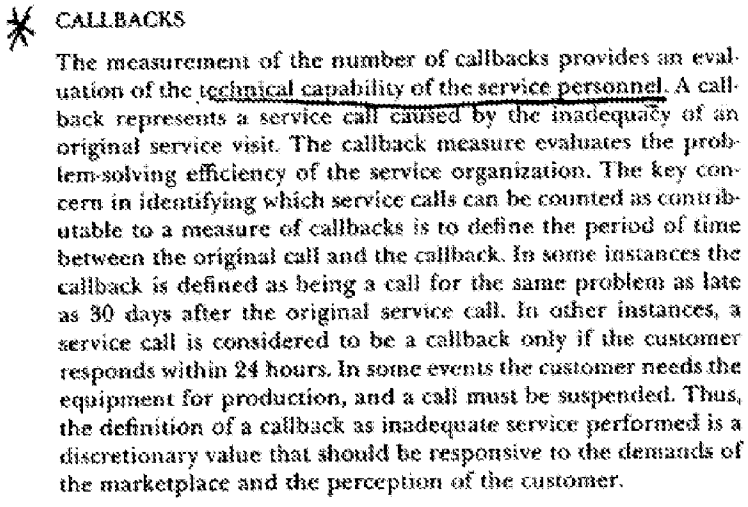
C1. Total Maintenance Costs = Sum of Labor \$ + Parts \$ + Travel \$ + · · · + Direct \$ + Indirect \$ + G&A

C2. Labor Costs = Labor Hours × Loaded Cost per Hour

C3. Parts and Materials Cost = Parts, Expendibles, and Consumables

Direct + Indirect Costs

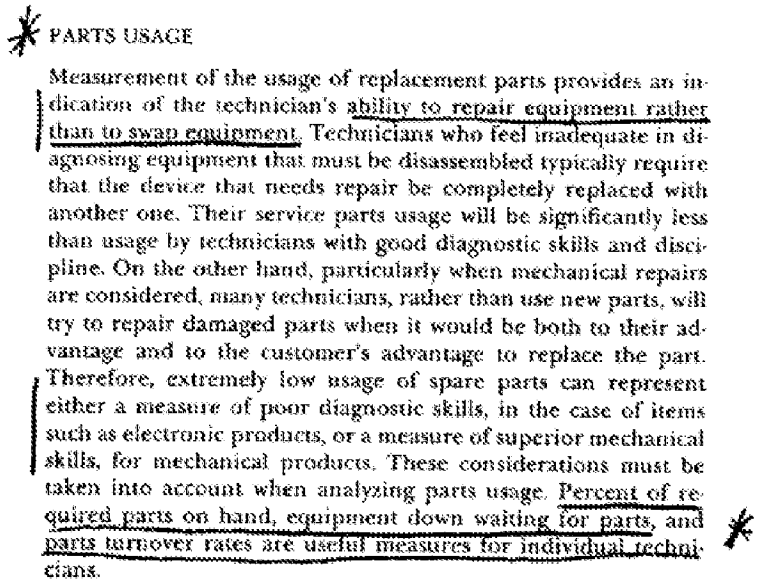
**Figure 8: Patton et al., Service Management Principles and Practice, Page 46**



CALLBACKS

The measurement of the number of callbacks provides an evaluation of the technical capability of the service personnel. A callback represents a service call caused by the inadequacy of an original service visit. The callback measure evaluates the problem-solving efficiency of the service organization. The key concern in identifying which service calls can be counted as contributable to a measure of callbacks is to define the period of time between the original call and the callback. In some instances the callback is defined as being a call for the same problem as late as 30 days after the original service call. In other instances, a service call is considered to be a callback only if the customer responds within 24 hours. In some events the customer needs the equipment for production, and a call must be suspended. Thus, the definition of a callback as inadequate service performed is a discretionary value that should be responsive to the demands of the marketplace and the perception of the customer.

**Figure 9: Patton et al., Service Management Principles and Practice, Page 50**



PARTS USAGE

Measurement of the usage of replacement parts provides an indication of the technician's ability to repair equipment rather than to swap equipment. Technicians who feel inadequate in diagnosing equipment that must be disassembled typically require that the device that needs repair be completely replaced with another one. Their service parts usage will be significantly less than usage by technicians with good diagnostic skills and discipline. On the other hand, particularly when mechanical repairs are considered, many technicians, rather than use new parts, will try to repair damaged parts when it would be both to their advantage and to the customer's advantage to replace the part. Therefore, extremely low usage of spare parts can represent either a measure of poor diagnostic skills, in the case of items such as electronic products, or a measure of superior mechanical skills, for mechanical products. These considerations must be taken into account when analyzing parts usage. Percent of required parts on hand, equipment down waiting for parts, and parts turnover rates are useful measures for individual technicians.

**Figure 10: Patton et al., Service Management Principles and Practice, Page 51**

More generally teach a system and method for service management comprising:

- predicting parts for an onsite repair in response to a plurality of information including but not limited to service/repair history (service forecasting, predictive maintenance, etc.; Figure 5-1; Table 5-1; Pages 72-73; Paragraph 1, Page 139; Last Paragraph, Page 163; "A good support system *proactively determines what parts will* ***probably*** *be required and delivers those parts to meet the technician.*", Paragraph 1, Page 198; Figures 9-1, 9-7; Tables 9-1, 9-2);

- utilizes averages when analyzing time series data ( "Moving averages are better for time series analysis than are single point estimates", Paragraph 2, Page 73);

- parts inventory management based on repair history (part usage, failure probabilities, etc.) and other service data (Pages 146-148);

- service call management ("The call management organization acts as the heart of the service operation function. Its purpose is to validate customer status, determine the real customer needs,

assign priorities and pass the call to the person best qualified to help the caller.", Paragraphs 4-5, Page 198);

- configuration management ("the service organization is completely aware of the exact configuration of each piece of equipment required to service. A service technician dispatched to a **specific location to repair a specific piece of equipment can know exactly what is to be repaired and exactly what tools, test equipment and parts to take along**.", Last Paragraph, Page 199).

- capturing, storing, analyzing and reporting on a plurality part service data including but not limited to part usage repair costs, technician performance, product/equipment performance, preventive metrics and the like (parts per unit repair, no trouble found, actual vs. estimated, first call fix rate, callback rate, attempts per incident, call duration, etc.; Performance Measurement and Reporting, Pages 44-48, 50-51; Table 3-2; "Percentage of required parts on hand, equipment down waiting for parts and parts turnover rates are useful measures for individual technicians.", Last Paragraph, Page 51);

- flagging repairs/service information to indicate/alert users to one or more conditions/information (corrective maintenance, alerts, condition monitoring; Last Paragraph, Page 196; Paragraph 1, Page 197; Last Paragraph, Page 142; Figure 9.1);

- identifying training needs and providing individualized training based on observed/measure performance metrics (Pages 44-48; Last Paragraph, Page 117; Paragraph 2, Page 124); and

- automating service part management utilizing computers (information systems, apparatus, etc.; "Most service parts are low usage and are best forecast by humans with computerized

historical data and information on expected market demand and technical supply.", Paragraph 1, Page 164; Information Systems, Pages 242-249).

Patton et al. teach identifying a set of symptoms associated with a product (i.e. diagnostics, troubleshooting, predictive maintenance, etc.; Pages 130-33, 136-139; Paragraphs 4-5, Page 198; Last Paragraph, Page 1999; Figures 9-1, 9-7; Tables 7-1, 9-1).

Patton et al. teach providing general and individualized training to a plurality of users (technicians, service center representatives, call qualifiers, etc.) based on a plurality of monitored human performance metrics (accuracy, completeness, response time, productive time, productivity, effectiveness, etc.) and test/examinations (Page 48; Paragraph 2, Page 53; Service Training, Pages 117-125; Table 3-2).

Patton et al. teach flagging repairs/service information to indicate/alert users to one or more service/repair conditions/information/needs (corrective maintenance, alerts, condition monitoring; Last Paragraph, Page 142; Paragraph 1, Page 143; Last Paragraph, Page 196; Paragraph 1, Page 197; Last Paragraph, Page 142; Figure 9.1).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for service management as taught by Patton & Feldmann with its ability to track a service technicians first call fix rate would have benefited from tracking the number of trips (calls, visits, attempts, etc.) in view of the teachings of Patton et al.; the resultant system/method enabling businesses to the purpose of

evaluate service personnel's problem-solving abilities (Patton et al.: Callbacks, Page 50).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Regarding Claims 41 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patton & Feldman, Service Parts Handbook (1997) as applied to claims 42 and 44 above, and further in view of Glovitz et al., U.S. Patent No. 5,682,421.

Regarding Claims 41 and 53 Patton & Feldmann teach the benefits of supporting a limited number of preferably similar equipment in order to reduce the costs as well as optimized the resources (personnel, training, etc.) associated with the product's support (Last Paragraph, Page 256; Paragraphs 1, Page 257).

While utilizing costs, both actual and forecasted, to determine which products a company wishes to support and/or continue to manufacture is known to those skilled in the art Patton & Feldmann does not expressly teach determining which products are least desirable to support in terms of cost as claimed.

Glovitz et al. inherently teach determining which products are no longer desirable to support wherein the system determines the reliability and/or profitability of equipment (product, item, etc.) utilizing information collected during the repair process, in an analogous art of service/repair management (i.e. unprofitable and/or unreliable products being inherently undesirable to keep/support; Column 1, Lines 50-61).

More generally Glovitz et al. teach a method and system for managing the repair of field equipment wherein service requests are made/received, technicians are assigned/dispatched and repairs are made/completed (Abstract; Column 1, Lines 29-61) comprising:

- identifying a set of symptoms (failure type/mode, nature of the malfunction, etc.) for the purposes of accepting and appropriately assigning service requests based on the symptoms, technician skill level and other factors (nature of the repair/failure; Column 1, Lines 41-60; Column 2, Lines 42-53; Column 10, Lines 36-44; Column 14, Lines 20-25; Table 1, Fields 5 and 27-28);

- analyzing a repair history for the product (item, equipment, etc.) for the purposes of diagnosing (classifying, qualifying, understanding, etc.) the nature of the service/repair request (Column 1, Lines 41-60; Column 2, Lines 42-53; Column 10, Lines 36-44; Column 14, Lines 20-25; Table 1, Fields 5 and 27-28);

- tracking and controlling the inventory of repair parts, specifically the tracking of used repair parts for billing and other purposes; and

- utilizing service/repair information (call records, parts used, etc.) to evaluate the performance of technicians ("Data collected for inventory usage and service of specific copiers may be used to evaluate equipment reliability and profitability. The data may also be *used to evaluate a technician's performance*.", Column 1, Lines 50-61).

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting/optimizing the parts needed for a repair, with its ability to identify parts which are not desirable/optimal to stock/carry, as taught by Patton & Feldman. would have benefited from determining the profitability and/or reliability of the products being repaired in view of the teachings of Glovitz et al.; the resultant system enabling users to minimize costs by eliminating parts/products that are no longer desirable to stock/carry/support (Glovitz et al.: Column 1, Lines 50-61).

**(10) Response to Argument**

In Applicant's Appeal Brief filed May 19, 2008 Applicant's argue that the pending claims were erroneously rejected because the prior art of record fails to teach or suggest each and every element of the claimed invention. Specifically Applicant's argue that the prior art of record, specifically that Patton & Feldman, Service Parts Handbook, Patton et al., Service Management Principles and Practice and Glovitz et al., U.S. Patent No. 5,682,421 fail to teach or suggest:

- "a number of trips" (Appeal Brief: Paragraph 3, Page 6; Paragraph 3, Page 8) as recited in independent claims 32 and 45;

- "training call qualifiers in response to the costs" (Appeal Brief: Paragraph 2, Page 9) as recited in independent claim 38;

- "determining which personnel to target for additional training in response to the costs" (Appeal Brief: Last Paragraph, Page 9) as recited in independent claim 42; or

- "determining a number of times" a part was over, under or correctly predicted in order to determine the expected waste (Appeal Brief: Paragraphs 3-4, Page 11).

In response to Applicant's arguments that the prior art of record fails to teach or suggest each and every feature of the claimed invention the examiner respectfully disagrees.

As an initial matter the examiner wishes to provide a brief overview of the interpretations applied to several key 'phrases' in the claims, each of these phrases

have been afforded their broadest reasonable interpretation consistent with the specification.

- trips: the number of attempts, calls, visits, travels or journeys a technician (user) makes to a repair site, location or customer in response to an onsite repair including but not limited to callbacks, broken calls, extra trips, repeat incidences/repairs for the same repair request or the like;

- over-predicting: the act of ordering, demanding, issuing, carrying or bringing one or more parts (supplies, materials, items) to a repair which are not used, not needed or otherwise return from the repair trip (e.g. excess, extra, sent and not used, issued and not used, returns).

- under-predicting: the act of *not* ordering, demanding, issuing, carrying, or bringing one or more parts (supplies, materials, items, etc.) to an onsite repair which are needed/necessary to complete the repair (e.g. stockout, shortage, needed and not sent, not on hand, demanded not issues, part not filed, part not-stocked/carried but demanded, etc.);

- mis-predicting: please see over-predicting and under-predicting above.

- waste: extra, unnecessary, unneeded, unused, unproductive, left over, useless consumption or expenditure, or to consume, spend (cost), or employ uselessly or without adequate return; and

- call qualifier: any person involved in any portion of the capturing, diagnosing, scheduling or performing of a repair or service.

In response to Applicant's argument that the prior art of record fails to teach or suggest "a number of trips" (Appeal Brief: Paragraph 3, Page 6; Paragraph 3, Page 8) as recited in independent claims 32 and 45 and "determining a number of times" a part was over, under or correctly predicted in order to determine the expected waste (Appeal Brief: Paragraphs 3-4, Page 11) the examiner respectfully disagrees.

Patton & Feldmann (Service Parts Handbook) teach a method for managing service parts (parts, suppliers, materials, items, etc. used in the repair and maintenance of products) comprising determining the cost of mis-predicting (over/under, incorrectly) the parts replaced (used, needed) during an onsite repair (trip, visit, call) wherein the costs indicate at least a **number of trips** (calls, visits, callbacks, return trips, etc.) symptoms were reported (i.e. a service call/request was made), parts were sent and at least one sent part was needed (used, part usage) and at least one part was unnecessary (extra, excess, not used). Specifically Patton & Feldmann teach determining a **number of trips** and/or a **number of times** as evidenced by at least the following:

- First Call Fix Rate (FCFR, Pages 58-59): is a direct measure of the ability a service technician (the service parts management system as a whole) to resolve (fix) the reported service/repair request (call) on the first call (trip). It is noted that:

  - a repair/service would be unsuccessful (have failed) if any of the parts needed where not available/carried by the technician for the first trip (under-predicting);

- a low FCFR would represent a cost (also waste) associated with mis-predicting parts necessary for an onsite repair;
- the system/method clearly tracks and differentiates between the first trip to the onsite and subsequent calls in order to compute this metric.

- Uptime Analysis
  - Call Back Percentages: direct measure of the number of times (% of calls) made before a repair request is resolved (completed);
  - Call Back Time: time between calls/trips.

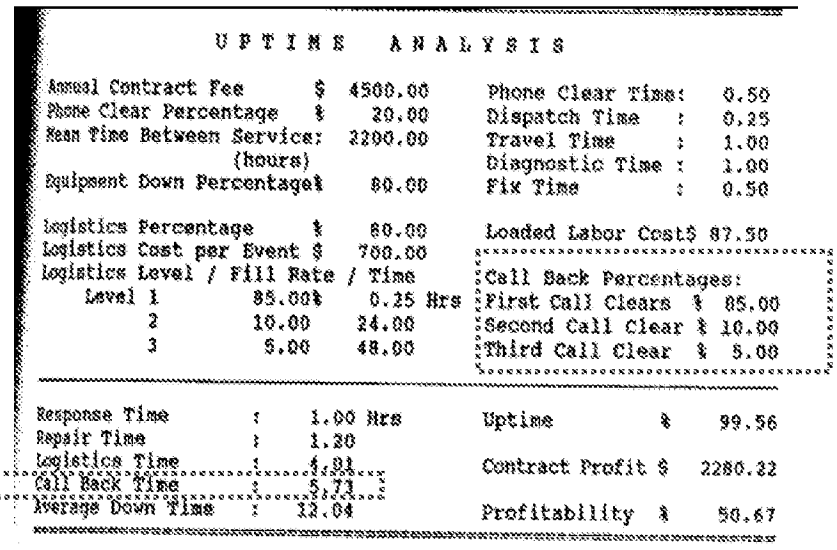


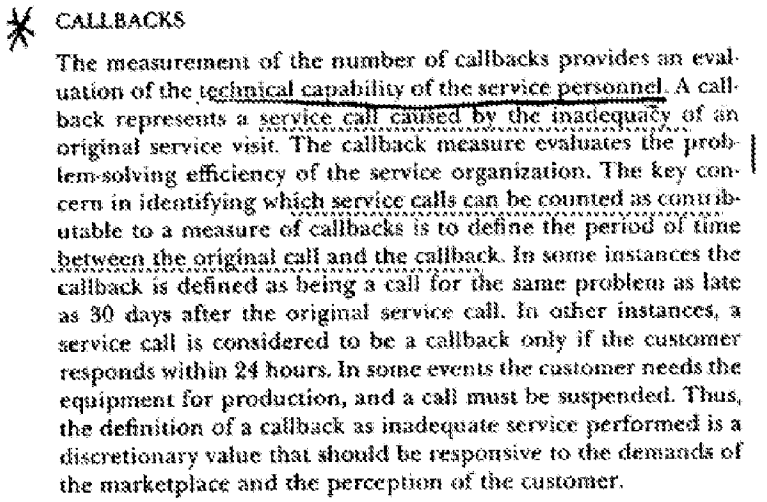

FIGURE 16-1
Logistics has major influence on uptime

**Figure 11: Figure 16-1, emphasis added**

Patton et al. (Service Management Principles and Practice), teach a method for managing the service/repair management comprising determining the cost of mis-predicting (over/under, incorrectly) the parts replaced (used, needed) during an onsite

repair (trip, visit, call) wherein the costs indicate at least a number of trips (calls, visits, callbacks, return trips, etc.) symptoms were reported (service call/request was made), parts were sent and at least one sent part was needed (used, part usage) and at least one part was unnecessary (extra, excess, not used). Specifically Patton et al. teach determining a **number of trips** and/or a **number of times** as evidenced by at least the following:

- Callbacks (Page 50) wherein the method not only tracks the number of callbacks but also the time between callbacks (which are requests to repair an already reported and attempted repair which was inadequate/failed);



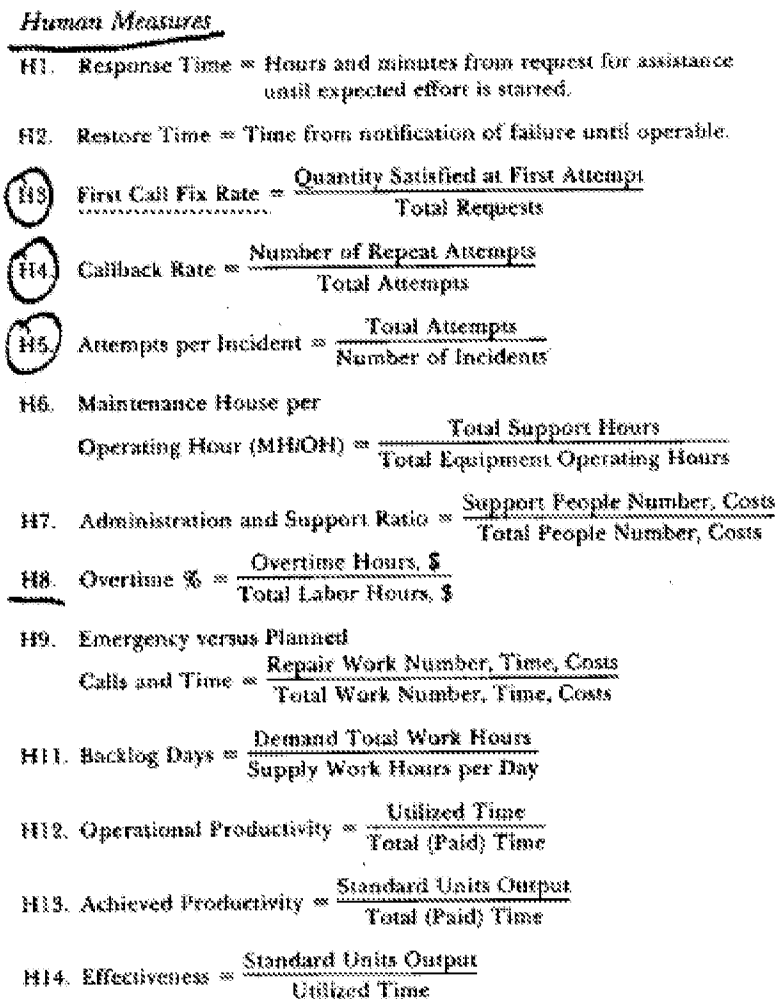
CALLBACKS

The measurement of the number of callbacks provides an evaluation of the technical capability of the service personnel. A callback represents a service call caused by the inadequacy of an original service visit. The callback measure evaluates the problem-solving efficiency of the service organization. The key concern in identifying which service calls can be counted as contributable to a measure of callbacks is to define the period of time between the original call and the callback. In some instances the callback is defined as being a call for the same problem as late as 30 days after the original service call. In other instances, a service call is considered to be a callback only if the customer responds within 24 hours. In some events the customer needs the equipment for production, and a call must be suspended. Thus, the definition of a callback as inadequate service performed is a discretionary value that should be responsive to the demands of the marketplace and the perception of the customer.

**Figure 12: Patton et al., Page 50, emphasis added**

- First Call Fix Rate (Page 48): direct measure of the Quantity Satisfied at First Attempt/Total requests – which clearly requires the method to track not only the total requests (calls to fix a given repair/service request) but also the number of repairs successfully completed during the first trip;

- Call Back Rate (Page 48): direct measure of the number of repeat trips (*Repeat Attempts*) over the total number of trips (attempts) to successfully complete a repair (which is not possible without the correct part(s)).



*Human Measures*

H1. Response Time = Hours and minutes from request for assistance until expected effort is started.

H2. Restore Time = Time from notification of failure until operable.

H3. First Call Fix Rate = $\frac{\text{Quantity Satisfied at First Attempt}}{\text{Total Requests}}$

H4. Callback Rate = $\frac{\text{Number of Repeat Attempts}}{\text{Total Attempts}}$

H5. Attempts per Incident = $\frac{\text{Total Attempts}}{\text{Number of Incidents}}$

H6. Maintenance House per Operating Hour (MH/OH) = $\frac{\text{Total Support Hours}}{\text{Total Equipment Operating Hours}}$

H7. Administration and Support Ratio = $\frac{\text{Support People Number, Costs}}{\text{Total People Number, Costs}}$

H8. Overtime % = $\frac{\text{Overtime Hours, \$}}{\text{Total Labor Hours, \$}}$

H9. Emergency versus Planned Calls and Time = $\frac{\text{Repair Work Number, Time, Costs}}{\text{Total Work Number, Time, Costs}}$

H11. Backlog Days = $\frac{\text{Demand Total Work Hours}}{\text{Supply Work Hours per Day}}$

H12. Operational Productivity = $\frac{\text{Utilized Time}}{\text{Total (Paid) Time}}$

H13. Achieved Productivity = $\frac{\text{Standard Units Output}}{\text{Total (Paid) Time}}$

H14. Effectiveness = $\frac{\text{Standard Units Output}}{\text{Utilized Time}}$

**Figure 13: Patton et al., Page 48, emphasis added**

In response to Applicant's argument that the prior art of record fails to teach or suggest "training call qualifiers in response to the costs" (Appeal Brief: Paragraph 2,

Page 9) as recited in independent claim 38 and/or "determining which personnel to target for additional training in response to the costs" (Appeal Brief: Last Paragraph, Page 9) as recited in independent claim 42 the examiner respectfully disagrees.

Patton & Feldmann teach training call qualifiers (e.g. call qualifier is the technician - Figures 16-2, 16-3) in response to the costs (e.g. costs of successfully completing a repair on the first trip which includes at leaving having the parts necessary to complete the repair/service) as evidenced by at least:

- providing training based on the parts carried/not carried to an onsite repair:

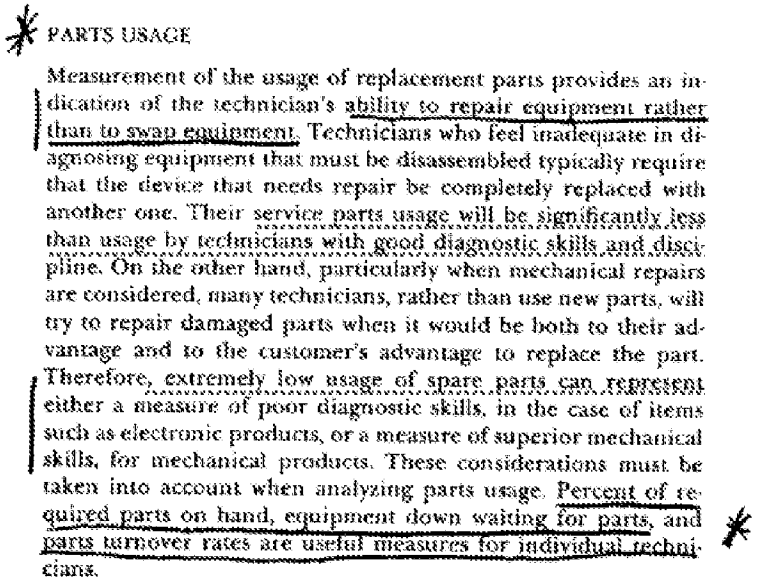
> "*Differences between what parts are provided, and what parts are really needed can guide* ***improvements*** *in diagnostics,* ***training*** *and discipline toward fewer parts and lower costs.*", emphasis added, Last Two Paragraphs, Page 45; Paragraph 1, Page 46

- pdentifying and training technicians (who act as call qualifiers) who mis-predict the parts necessary for an onsite repair (Last Paragraph, Page 443; Paragraph 1, Page 444)

> "one interpretation is that up to nine out of every ten parts that were expensively expedited to the field, were not really needed…In most cases it is felt that the *extra parts were ordered because of poor diagnostics failed to proactively determine the one or few parts that were probably needed to fix the failure*.", emphasis added, Last Paragraph, Page 443.
>
> "the opportunity here is for improved support engineering and field operations..", Paragraph 1, Page 444.

- Paragraph 2, Page 39; Last Two Paragraphs, Page 395; Paragraph 1, Page 396; Figure 25-2..

Patton et al. teach measuring the performance of service technicians as well as others involved in the service management process and then training those users in accordance (in response) to the measure performance (Pages 44-45; Callbacks, Page 50; Part Usage, Page 51; Chapter 8 Service Training, Page 119 (on-the job training); Paragraph 3, Page 124 (individualized training))



PARTS USAGE

Measurement of the usage of replacement parts provides an indication of the technician's ability to repair equipment rather than to swap equipment. Technicians who feel inadequate in diagnosing equipment that must be disassembled typically require that the device that needs repair be completely replaced with another one. Their service parts usage will be significantly less than usage by technicians with good diagnostic skills and discipline. On the other hand, particularly when mechanical repairs are considered, many technicians, rather than use new parts, will try to repair damaged parts when it would be both to their advantage and to the customer's advantage to replace the part. Therefore, extremely low usage of spare parts can represent either a measure of poor diagnostic skills, in the case of items such as electronic products, or a measure of superior mechanical skills, for mechanical products. These considerations must be taken into account when analyzing parts usage. Percent of required parts on hand, equipment down waiting for parts, and parts turnover rates are useful measures for individual technicians.

**Figure 14: Patton et al., Page 51, emphasis added**

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section **(9)** above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal** as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) **Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be

treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

Respectfully submitted,

Scott Jarrett

/Scott L Jarrett/

Primary Examiner, Art Unit 3623

**A Technology Center Director or designee must personally approve the new ground(s) of rejection set forth in section (9) above by signing below:**

Conferees:

Vincent Millin /VM/

Appeals Practice Specialist

Mrs. Beth VanDoren /B.V.D/

/Wynn W. Coggins/

Director, TC 3600